1135-05-272 **John Asplund** and **Thao Do***, thaodo@mit.edu, and **Arran Hamm**, **László Székely**, **Libby Taylor** and **Zhiyu Wang**. *Biplanar Crossing Numbers: The Probabilistic Method.*

Given a graph G, its crossing number $cr(G)$ is the minimum number of pairs of crossing edges in a drawing of G in the plane. The biplanar crossing number of G, denoted by $cr_2(G)$, is the minimum of $cr(G_1)+cr(G_2)$ among all edge partition $G = G_1 \cup G_2$. Probabilistic method has been used by Czabarka, Sýkora, Székely, Vrťo to prove $cr_2(G) \leq \frac{3}{8}cr(G)$ for any graph G and by Spencer to prove with high probability the biplanar crossing number of the Erdős-Renyi random graph $G(n,p)$ is asymptotically largest possible. In this talk we shall present those results and explain explicitly how Spencer's method implies similar results for the k-planar crossing number (the minimum sum of crossing numbers when drawing G in k planes) of $G(n,p)$. We also extend the result to d-regular random graph $G(n,d)$. (Received August 17, 2017)